

- Pedalino, M., K.E. Giller, and J. Kipe-Nolt. 1992. Genetic and physiological characterization of the non-nodulating mutant of *Phaseolus vulgaris* L.- NOD125. *J. Exp. Bot.* 43:843-849.
- Shirliffe, S.J., J.K. Vessy, B.R. Buttery, and S.J. Park. 1996. Comparison of growth and N accumulation of common bean (*Phaseolus vulgaris* L.) cv. OAC Rico and its nodulation mutants, R69 and R99. *Can. J. Plant Sci.* 76:73-83.

Agriculture and Agri-Food Canada Greenhouse and Processing Crops Research Centre, Harrow, ON, Canada N0R 1G0 Registration by CSSA. Received 7 Oct. 2005. *Corresponding author (parks@agr.gc.ca).

doi:10.2135/cropsci2005.10-0350

Published in Crop Sci. 46:1415-1417 (2006).

REGISTRATIONS OF MAPPING POPULATION

Registration of a C/M Doubled Haploid Mapping Population of Rice

The Louisiana State University AgCenter's Rice Research Station, Crowley, LA, released a doubled haploid (DH) mapping population Cocodrie/MCR01-0277 with 325 DH lines (Reg. no. MP-2, NSL 439502 MAP). The parent lines have been assigned PI numbers, as Genetic Stocks-*Oryza* (GSOR) 200326 (PI 641931 MAP) and MCR01-0277 as GSOR 200327 (PI 641932 MAP). The progeny lines are listed as GSOR 200001 to 200325. The mapping population was developed at the Rice Research Station from a cross between the sheath blight (caused by *Rhizoctonia solani* Kühn) susceptible cultivar Cocodrie (PI 606331) (Linscombe et al., 2000) and the line MCR01-0277 which was developed by M.C. Rush with a high level of partial resistance to sheath blight in the rice pathology program. Using the first letter of each parent line, these materials are designated as the C/M mapping population. A set of 325 DH plants was regenerated through anther culture from randomly sampled F₁ plants. Seeds of the 325 DH lines were increased in a winter nursery in Puerto Rico in 2004. The entire population was continued through two DH generations to provide materials.

The cross between Cocodrie and MCR01-0277 was made in 2003, and 14 F₁ plants were space planted in the greenhouse during the winter of 2003-2004. At the booting stage, boots were randomly collected for anther culture. A total of 235800 anthers were plated onto callus induction medium and 725 green plantlets were regenerated in 2004 from calli transferred to regeneration medium as described by Chu et al. (1998). These plants were transplanted in the greenhouse. After discarding the haploid, tetraploid, and a few aneuploid plants, which did not set seeds or exhibited very low spikelet fertility, the 325 normal seed setting plants (DH) were harvested. A single panicle of each DH plant was harvested for a panicle-to-row increase in the DH generation in 2004. All lines survived and produced 50 or more grams of seed in 2004.

The establishment of a DH mapping population was initially requested during the Multistate Rice Breeders Conference held in 2002 in Louisiana. The objective was to further understand the molecular basis of sheath blight resistance (S. Linscombe, personal communication, 2003). This population is to be used by USDA funded Rice Coordinated Agricultural Project (RiceCAP), a multiple institution effort, for studies in 2006 and following years (J.N. Rutger and A. McClung, personal communication, 2003). The Cocodrie parent is a high yielding cultivar but is susceptible to sheath blight with a 7 to 8 rating (0-9 rating scale where 0 = immune and 9 = very susceptible) while MCR01-0277 is resistant with a rating of 3.

The parent Cocodrie matures in approximately 120 d (from seeding to harvest maturity at normal planting dates in Louisiana) while MCR01-0277 matures in approximately 127 d under similar conditions. This results in moderate transgressive segregation for extremely late maturity. Phenotypic observation of the DH lines indicated that wide genetic diversity exists for agronomic traits, including major agronomic traits such as seedling vigor (where 1 = extra vigorous and 9 = very weak, range 3-8), plant height (range 70-146 cm), heading date (range 76-93 d), and sheath blight rating (0-9, range 3-8). Available data on each DH line will be accessible in GRIN (www.ars-grin.gov) as GSOR 200001 to 200325.

The DH mapping population will be placed in the GSOR collection at Stuttgart, AR. Limited amounts (ca. one quarter gram or 10 seeds of each line) may be obtained by contacting the GSOR, Dale Bumpers National Rice Research Center, USDA-ARS, P.O. Box 1090, Stuttgart, AR 72160, or gsor@grin-ars.gov, or by contacting the corresponding author. Requests from outside the United States must be accompanied by an import permit. Seeds of the parents and the DH mapping population will also be deposited at the National Center for Genetic Resources Preservation, 1111 S. Mason St., Fort Collins, CO 80521. Seeds are available for research purposes. If these genetic stocks contribute to the advancement of rice genetics knowledge or development of new cultivars, it is requested that appropriate recognition be given to the source.

Q.R. CHU,* S.D. LINSCOMBE, M.C. RUSH, D.E. GROTH,
J. OARD, X. SHA, AND H.S. UTOMO

References

- Chu, Q.R., S.D. Linscombe, H.X. Cao, F. Jodari, and D. Groth. 1998. A novel plant regeneration medium for rice anther culture of southern U.S. crosses. *Rice Biotechnol. Q.* 35:15-16.
- Linscombe, S.D., F. Jodari, P.K. Bollich, D.E. Groth, L.M. White, Q.R. Chu, R.T. Dunand, and D.E. Sanders. 2000. Registration of 'Cocodrie' rice. *Crop Sci.* 40:294.
- Q.R. Chu, S.D. Linscombe, D.E. Groth, X. Sha, and H.S. Utomo, Rice Research Station, LSU AgCenter, 1373 Caffey Rd., Rayne, LA 70578; M.C. Rush, Plant Pathology; and J. Oard, Agronomy Dep., LSU AgCenter, Baton Rouge, LA 70803. Approved for publication by the Director of the Louisiana Agricultural Experiment Station as manuscript number 05-61-0130. Registration by CSSA. Received 8 Mar. 2005. *Corresponding author (qchu@ricetec.com).

doi:10.2135/cropsci2005.0199

Published in Crop Sci. 46:1417 (2006).